

equally along its length. To cut down the area heated the tube to be drawn is placed transversely across a fish tail flame, which heats equally an area certainly not more than a quarter of an inch at found their way there as the fluid had a tendency to spread evenly the most, and the tube is pulled with considerable force when the glass is just commencing to melt. Several trials will show the best time to start pulling. This method gives pipettes with very fine tips not more than from three-quarters to one and one-half inches long.

*Zoological Laboratory,  
University of Pennsylvania.*

ROBERT T. HANCE.

#### NOTES ON EMBEDDING IN PARAFFIN

When embedding very small objects, such as insect larvæ or small flowers or anthers, in paraffin it is most convenient to orient them one behind the other. This method allows a single block to be made of from three or four to a dozen pieces of tissue and these may be cut in one ribbon. This obviously eliminates a great deal of the labor involved in making a block of each separate object, cementing it to the holder, trimming it and adjusting the microtome each time. In the ribbon it is easy to see where one piece of tissue ends and the other begins as there is usually several blank sections of paraffin between them. It is relatively simple to arrange the tissue in line under a carbon bulb with warm needles but a difficulty is met with when an attempt is made to place the paraffin mold in water for cooling. The material is shaken from position and must be reoriented. This had been overcome in the following way. A watch glass is used as a mold for embedding small objects and a petri dish is convenient for larger tissue. When the tissue is ready to be embedded the dish is heated to the melting point of the paraffin under the electric bulb. It is then placed in a crystallization dish with two slides beneath it to prevent it from touching the bottom of the container. Paraffin is then poured into the small dish and the objects oriented as desired the heat of the electric bulb keeping the paraffin melted. Then the light is turned off and cold water is poured into the crystallization dish. Since the dish containing the paraffin is raised from the bottom the water flows under it and soon solidifies the paraffin in the lower part of

the dish which consequently holds the objects fast. As soon as a surface film is formed enough water can be added to cover the embedding mold to complete the hardening of the paraffin.

In petri dishes or watch glasses the bottom is practically flat and true and the tissue is allowed to sink to the bottom. When the tissue is cut out as a block the part that rested against the bottom makes one of the two parallel sides and requires little or no trimming.

When a number of pieces of tissue or a number of series (as described above) are embedded in one disk of paraffin it is dangerous to attempt to separate them with a knife as one can never be sure of the direction the crack in the paraffin will take. I have found that a hand scroll saw or coping saw (which may be purchased for ten to twenty-five cents) does admirably for cutting a block of tissue from the main disk. A hot wire is used by some but is not nearly so convenient nor so accurate as the saw. The use of the saw permits many more pieces to be placed in the same space as no care need be taken to have well defined pathways for the paraffin to split along as is necessary when a knife is used for separating the pieces.

ROBERT T. HANCE.

#### A NEW SPECIES OF OPERCULARIA

#### *Opercularia wallgreni* Grier n. sp.

Plate XIX. Figs. 1 and 2

*Bodies ovate or attenuate fusiform, about 3 times as long as broad, tapering mostly toward the pedicle extremity. Ciliary disc never elevated above the margin of the peristome a greater distance than  $\frac{1}{2}$  the length of the animal, apparently with but one circlet of cilia. Membranous collar moderately large, but obliquely set. Endoplast band-like, curved, parenchyma beneath granulated. Pedicle tree-like, slender, branching profusely and dichotomously, attaining a considerable proportionate altitude, delicately striate in a longitudinal direction. Transverse articulations wanting or present only where branching occurs.*

*Height entire polypidum 1.4 mm., length extended zooid .10 mm., width .022 mm., width of pedicle .005 mm.*